



**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: Joji MISHINA et al.  
Title: SEATBELT RETRACTOR  
Appl. No.: 09/963,388  
Filing Date: 09/27/2001  
Examiner: John M. Jillions  
Art Unit: 3654

**BRIEF ON APPEAL TRANSMITTAL COVER SHEET**

Commissioner for Patents  
PO Box 1450  
Alexandria, Virginia 22313-1450

Sir:

Transmitted herewith is an Appeal Brief Under 37 C.F.R. 1.192 in the above-identified application.

- ☒ Brief on Appeal, including Appendix, in triplicate (9 pages each).
- ☒ Check No. 38032 in the amount of \$330.00 for the Appeal Brief fee .
- ☒ The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or is even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741.

Please direct all correspondence to the undersigned attorney or agent at the address indicated below.

Respectfully submitted,

Date: 8/30/04

By: [Signature]

FOLEY & LARDNER LLP

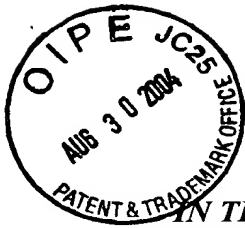
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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

Applicant: Joji MISHINA et al.  
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**BRIEF ON APPEAL**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Under the provisions of 37 C.F.R. § 1.192, this Appeal Brief is being filed in triplicate together with a check in the amount of \$330.00 covering the Rule 17(c) appeal fee. If this fee is deemed to be insufficient, authorization is hereby given to charge any deficiency (or credit any balance) to the undersigned deposit account 19-0741.

**I. REAL PARTY IN INTEREST**

The real party in interest is Takata Corporation.

**II. RELATED APPEALS AND INTERFERENCES**

Appellants are unaware of any related appeals or interferences.

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**III. STATUS OF CLAIMS**

Claims 12, 14 and 16-23 are pending. Claims 22 and 23 are withdrawn. A copy of the pending claims is presented in the APPENDIX. The final rejection of claims 12, 14 and 16-21 in the Office Action mailed January 30, 2004 is appealed. Applicants note that the Amendment filed April 30, 2004 has not been entered, but that claims 10 and 11 are not listed as pending claims in the Advisory Action mailed May 25, 2004. Applicants assume that claims 10 and 11 are canceled for purposes of the Appeal.

**IV. STATUS OF AMENDMENTS**

No amendments to the claims have been filed subsequent to the final rejection of claims 12, 14 and 16-21 mailed January 30, 2004.

**V. SUMMARY OF INVENTION**

The retractor includes a reel (4) for winding a webbing (3), a locking mechanism (6) and a torsion bar (7). The torsion bar (7) connects the reel (4) to the locking mechanism (6). The locking mechanism (6) is configured to be prevented from rotating in order to prevent the webbing (3) from withdrawing from the reel (4). One end of the torsion bar (7) is press fitted into a hole in the reel (4a) and the other end of the torsion bar (7) is press fitted into a hole in the locking mechanism (6). A backlash preventing rib (20) is provided in at least one of the hole (4a) of the reel (4) and the hole of the locking mechanism (6) at a location which is not subject to a large force between the reel (4) and the torsion bar (7) when rotation of the locking mechanism (6) is prevented. An exemplary embodiment of the seatbelt retractor is shown in Figures 1 and 2.

**VI. ISSUE**

The issue presented on appeal is the following:

(1) Whether claims 12, 14 and 16-21 are unpatentable over U.S. Patent No. 6,029,924 (hereinafter “Ono”).

**VII. GROUPING OF CLAIMS**

Claims 12, 14 and 18 stand or fall together. Claims 19, 20 and 21 stand or fall together. Claims 16 and 17 stand separately.

**VIII. ARGUMENT**

Claims 12, 14, and 16-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ono.

Claims 12, 14 and 18-21

The rejection of independent claims 12 and 19 should be withdrawn because Ono fails to disclose, teach or suggest the claimed invention. For example, Ono does not disclose, teach or suggest a rib that “includes an arc-shaped cross section” as called for by claim 12 or a rib that “includes a quadrilateral cross section,” as called for in claim 19.

The final Office Action states that the particular shape of the ribs set forth in claims 12 and 19 would have been obvious to one of ordinary skill in the art since many different shapes could be used to accomplish the same function. On the contrary, the shape of Ono’s ribs (21) cannot accomplish the same function as the claimed ribs. The ribs (21) disclosed by Ono have several disadvantages compared to the present invention. The ribs (21) are formed in a direction where casting is difficult. In addition, the shape of the ribs (21) makes press fitting and removal problematic. On the other hand, claims 12 and 19 call for particular

shapes that minimize casting, press fitting and removal problems. Furthermore, the shape of the ribs recited in the claims guide the torsion bar to secure press fitting and removal, as well as to prevent backlash.

The Office Action improperly cites no prior art to support the contention that the shape of the ribs would have been obvious to one of ordinary skill in the art. The rejection must rely on an explicit teaching of the prior art, because “components which are functionally or mechanically equivalent are not necessarily obvious in view of one another.” *In re Scott*, 323 F.2d. 1016 (CCPA 1963). As described above, the ribs of Ono are not “functionally or mechanically equivalent.” The only suggestion of the importance of using ribs of a particular shape and configuration is contained in the present application. However, any reliance on the present application would constitute impermissible hindsight reasoning.

The Office Action also improperly states that the claimed shapes are of no critical importance and therefore are not entitled to any patentable weight. However, the Office Action provides no legal basis for ignoring the shape limitations of the claims. It is axiomatic that claim limitations cannot be ignored. Reconsideration and withdrawal of the rejection is respectfully requested.

Claims 14 and 18 depend from claim 12 and are allowable therewith, for at least the reasons set forth above, without regard to the further patentable limitations contained therein. Claims 20 and 21 depend from claim 19 and are allowable therewith, for at least the reasons set forth above, without regard to the further patentable limitations contained therein.

Claims 16 and 17

The rejection of claims 16 and 17 should be withdrawn because Ono fails to disclose, teach or suggest the claimed invention. For example, Ono does not disclose, teach or suggest, among other things, a “backlash preventing structure” that “includes a tapered portion,” as called for by claims 16 and 17.

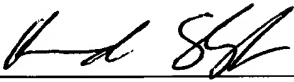
The rejection of claims 16 and 17 is flawed for at least the same reasons as the rejection of claims 12 and 19. For example, the Office Action states that one of ordinary skill in the art would have considered any shape of the backlash preventing structure that would provide a friction fit. However, the shape of Ono’s ribs (21) cannot accomplish the same function as the claimed backlash preventing structure. Also, the Office Action improperly cites no prior art to support the contention that the shape (i.e. tapered portion) of the backlash preventing structure would have been obvious to one of ordinary skill in the art. Finally, the Office Action incorrectly states that the claimed tapered portions are of no critical importance and therefore are not entitled to any patentable weight. The aforementioned flaws in the rejection have been addressed above in the remarks associated with the rejection of claims 12 and 19. These remarks apply with equal force to the rejection of claims 16 and 17 and are not repeated here solely for the sake of brevity. Reconsideration and withdrawal of the rejection is respectfully requested.

**IX. CONCLUSION**

Applicants respectfully submit that the pending claims are now in condition for allowance. An early notice to this effect is earnestly solicited.

Respectfully submitted,

Date 8/30/04

By 

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**APPENDIX**

Claims 1-11: CANCELED

12. (Previously Presented) A seat belt retractor comprising:

a reel for winding a webbing;

a locking mechanism connected to the reel by a torsion bar;

wherein the locking mechanism is configured to be prevented from rotating in order to prevent the webbing from withdrawing from the reel;

wherein one end of the torsion bar is press fitted into a hole in the reel and the other end of the torsion bar is press fitted into a hole in the locking mechanism;

wherein a rib to prevent backlash is positioned in the hole in at least one of the reel and the locking mechanism at a location not subjected to the majority of the force applied between the at least one of the reel and the locking mechanism and the torsion bar when rotation of the locking mechanism is prevented; and

wherein the rib includes an arc-shaped cross section.

13. CANCELED

14. (Previously Presented) The retractor of claim 12 wherein the cross-section of the rib varies in width in the axial direction.

15. CANCELED



16. (Previously Presented) A seat belt retractor comprising:

a reel for winding a webbing;

a locking mechanism connected to the reel by a torsion bar;

wherein the locking mechanism is configured to be prevented from rotating in order to prevent the webbing from withdrawing from the reel;

wherein one end of the torsion bar is press fitted into a hole in the reel and the other end of the torsion bar is press fitted into a hole in the locking mechanism;

wherein a backlash preventing structure is positioned in the hole in at least one of the reel and the locking mechanism at a location not subjected to the majority of the force applied between the at least one of the reel and the locking mechanism and the torsion bar when rotation of the locking mechanism is prevented; and

wherein the backlash preventing structure includes a tapered portion located in the locking mechanism and projecting toward the end of the torsion bar located in the hole.

17. (Previously Presented) A seat belt retractor comprising:

a reel for winding a webbing;

a locking mechanism connected to the reel by a torsion bar;

wherein the locking mechanism is configured to be prevented from rotating in order to prevent the webbing from withdrawing from the reel;

wherein one end of the torsion bar is press fitted into a hole in the reel and the other end of the torsion bar is press fitted into a hole in the locking mechanism;

wherein a backlash preventing structure is positioned in the hole in at least one of the reel and the locking mechanism at a location not subjected to the majority of the force applied between the at least one of the reel and the locking mechanism and the torsion bar when rotation of the locking mechanism is prevented; and

wherein the backlash preventing structure includes a tapered portion located in the reel and projecting toward the end of the torsion bar located in the hole.

18. (Previously Presented) The seat belt retractor according to claim 12 wherein the cross section of the rib includes a constant width in the axial direction.

19. (Previously Presented) A seat belt retractor comprising:

a reel for winding a webbing;

a locking mechanism connected to the reel by a torsion bar;

wherein the locking mechanism is configured to be prevented from rotating in order to prevent the webbing from withdrawing from the reel;

wherein one end of the torsion bar is press fitted into a hole in the reel and the other end of the torsion bar is press fitted into a hole in the locking mechanism;

wherein a rib to prevent backlash is positioned in the hole in at least one of the reel and the locking mechanism at a location not subjected to the majority of the force applied between the at least one of the reel and the locking mechanism and the torsion bar when rotation of the locking mechanism is prevented; and

wherein the rib includes a quadrilateral cross section.

20. (Previously Presented) The seat belt retractor according to claim 19, wherein the cross section of the rib includes a constant width in the axial direction.

21. (Previously Presented) The seat belt retractor according to claim 19, wherein the cross section of the rib varies in width in the axial direction.

22. (Withdrawn) A method of forming a seat belt retractor comprising the following steps:

providing a reel or locking mechanism with an axial hole; and

punching the reel or the locking mechanism with a punch in the proximity of a side of an inner peripheral surface of the axial hole, thereby creating a backlash preventing rib; and

inserting an end of a torsion bar into the axial hole.

23. (Withdrawn) The method according to claim 22, wherein a part of the reel or the locking mechanism at a peripheral edge of the axial hole is moved toward the torsion bar by the punching.